

Table 1. Threats to humpback chub in Grand Canyon and corresponding recommended management actions.

Threat	Management Action	Proposed Mgt Action	Proposed Evaluation Action	Time Line for Implementation
1. Habitat affected by streamflow regulation	Program of experimental flows	6. 7. 8. 9. 11. 13. 16. 19. 21. 22.	17.	On-going
2. Flows necessary for all life stages	Program of experimental flows	6. 7. 8. 9. 13. 16. 19. 21. 22.	17.	On-going
3. Cold water temperature	Temperature Control Device	6. 7. 8. 9. 10. 11. 13. 16.	10. 17.	Risk Assessment FY 2003 NEPA FY 2005 Construction FY2006-07

		18. 21.		
4. Handling for scientific studies and recreational purposes	Identify redundancy in sampling	7. 8. 11. 14. 16. 24.	15.	Evaluation in FY 2004
5. Asian tapeworm, Lernaea anchor copepod	Survey population; identify minimization strategies	6. 7. 8. 10. 21.	10.	FY 2005
6. Escape of nonnative fish into the Colorado River and its tributaries	Invasive Species Management Plan	1. 6. 7. 8. 10. 16. 18. 19. 21. 22.	10. 17.	FY 2006
7. Predation by nonnative warm water fish species	Removal of nonnative fish from the LCR	1. 6. 7. 8. 11. 16.	17.	FY 2004-2007

		18. 19. 21		
8. Predation by nonnative cold water fish species	Mechanical removal of trout from mainstem	1. 6. 7. 8. 11. 12. 13. 16. 18. 19. 21.		FY 2003-2007
9. Legal protection of habitat and flow		2.? 3.? 6. 7. 8. 13. 22.		
10. Need for Conservation Plans	Develop comprehensive plan	2.? 3.? 6.? 7. 8. 14. 16. 21. 22.	15.	FY 2007

11. Non-source pollutants in the LCR watershed	Pollution Control Plan for LCR	2. 3. 7. 8. 16. 19. 22.		FY 2005
12. Hazardous materials spills at the Cameron Bridges	Emergency Response Plan for LCR Bridges	2. 7. 8. 16. 22.		FY 2005
13. Genetics		7. 8. 9. 11. 14. 16. 24.		

Project 5 –scratched; this is being done by this process

Projects 7 and 8 are in all rows because having fish available for experimentation, brood stock development, experimental augmentation applies to all threats; project 8 would include a determination before taking action (be included in feasibility); would have to take into account many factors, including status of HBC pops in entire basin

Projects are combined as one genetics project

